

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

Title V Permit Renewal V-03-016
NORTH STAR STEEL KENTUCKY, INC.
CALVERT CITY, KENTUCKY
April 4, 2003
WILSON TAN, REVIEWER
Plant I.D. # 21-157-00029
Application Log # 54937

SOURCE DESCRIPTION:

North Star Steel Kentucky, Inc., an existing Title V major source (for Particulate Matter and Nitrogen Oxide), submitted a permit renewal application to its existing V-97-038 permit.

North Star Steel Kentucky, Inc is a manufacturer of steel sheets from billets. The billets are heated in a natural gas reheat furnace, and the hot billets are rolled into sheets. In addition, steel flakes recovered from the rolling operation are sold as scrap.

COMMENTS:

Permit renewal incorporated few changes:

- a) Language change – Descriptive text in emission point 01 (Billet Reheat Furnace) has been changed to ‘An Italimpianti reheat furnace with an average monthly processing rate of 100 tons of steel per hour and a maximum natural gas usage rate design of 191 mmBTU/hr.’
- b) Language change – Descriptive text in emission point 02 (Hot Rolling Mill) has been changed to ‘A Schloemann Siemag/Danieli rolling mill with a steel processing average capacity of 100 tons per hour.
- c) North Star Steel is **not** considered as one of the 28 source categories subject to the 100 TPY PSD threshold of a criteria pollutant. The language in Emissions Limitations (section 2 of emission points 01 and 02) for Particulate Matter, ‘Self imposed to preclude 401 KAR 51:017, Prevention of significant deterioration’ has been removed. 401 KAR 59:010 – New process operations applies to emission point 01 and 02 but emission limitations requested by the company were used because it is more stringent.
- d) Emission point 03 (03) - Ink Stenciling Operation: The operation of ink stenciling of steel flats, channels, angles and other steel structural shapes has been discontinued at the facility.

Increase in source-wide Particulate Matter (PM) emission - North Star Steel Kentucky, Inc. has provided a more accurate Particulate Matter emission for point 05 (Haul Roads).

Decrease in source-wide VOC emission – North Star Steel Kentucky, Inc. has discontinued its Ink Stenciling operation (emission point 03).

No change in Nitrogen Oxide emission.

STATEMENT OF BASIS (TITLE V No. V-97-038)

Partial statement of basis pertaining to emission point #1 and #2 that explains why the PM emission limitations remain unchanged.

SOURCE DESCRIPTION:

Emission Point #1: Natural gas fired reheat furnace used to heat steel billets for rolling.

COMMENTS:

This emission point has emissions primarily from natural gas combustion and some additional particulate emissions from the steel being heated. There is no control equipment.

The emission factors for the particulate emissions have been taken from AP-42 factors for natural gas combustion and a worst case estimate for steel emissions. All other emission factors were derived from stack tests performed on the plant.

There applicable regulation for this point is 401 KAR 59:010 - New process operations. The company has requested a limit on nitrogen oxide and particulate allowables as partial credit to preclude the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality.

SOURCE DESCRIPTION:

Emission Point #2: A Schloemann Siemag/Danieli rolling mill with a steel processing capacity of 100 tons per hour

COMMENTS:

This emission point has particulate emissions generated from the rolling operation. The emission factors were calculated taking a worst case engineering estimate. The heavy metals present in trace quantities in the steel are considered to be emitted as particulates and not as toxics as they are bonded in the steel.

The applicable regulation for this point is 401 KAR 59:010 - New process operations.

The source is required to limit the particulate emissions and has requested a limit lower than the allowable per 59:010 as partial credit to preclude the applicability of 401 KAR 51:017, Prevention of significant deterioration of air quality. The visible emissions shall be kept below 20%.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements.

At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.